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ABSTRACT

This report describes a study which tested the applicability to rural schools of "effective school" research, which focuses on characteristics associated with schools found effective through analysis of standardized student achievement test scores. Strategies for providing input from local personnel included research awareness sessions, a graduate level university course, and testing the assessment and improvement process in a small elementary school. Data provided by a questionnaire distributed to all school staff, interviews of teachers and the superintendent, and archival documents were used to assess school strengths and weaknesses in terms of seven effective school characteristics: safe and orderly environment, clear school mission, principal's instructional leadership, high expectations for achievement, student time on task, frequent monitoring of progress, and supportive home-school relations. Intended as a measure of educational equity, a correlation of achievement test scores with socioeconomic status was inconclusive due to the small number of students. Aside from contextual differences, results generally paralleled those found in urban schools. The conclusion is that with some recommended modifications, effective school research is relevant to rural settings and can encourage rural school personnel to examine and improve their practices. Summary profiles of interview and questionnaire data are appended. (MJL)

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Effective School Research:

Will It Play in the Country?

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I. INTRODUCTION

The Effective School research initiative has become one of the more recognized and acclaimed school improvement movements in recent educational history. Contrary to the results of the "Equality of Educational Opportunity" report (Coleman, J.S., Campbell, E.Q., Hobson, C.J., McPartland, J., Mood, A.M., Weinfeld, F.D., and York, R.L., 1966), the effective school research asserts that schools can and do make a difference in the achievement of all children. The popularity of this research is due no doubt in part to its commitment to educational equity. In fact, this body of research labels a school effective when there are no significant differences in student standardized test achievement across socio-economic strata (SES).

Another attractive feature of the effective school research is its common sense delineation of the necessary ingredients for an effective school. Most of the research has generally focused on some combination of seven characteristics associated with schools found effective through student standardized test achievement scores: (1) safe and orderly environment; (2) clear school mission; (3) instructional leadership of the principal; (4) high expectations for student achievement; (5) student opportunity to learn and time on task; (6) frequent monitoring of student progress; and (7) supportive home-school relations (Connecticut State Department of Education, 1981). Although various other researchers (Austin, 1979; Brookover and Lezotte, 1979; Edmonds, R.R. and Frederiksen J., 1978; Hersh, 1981; and Rutter, M., Maughan, B., Mortimore, P., Ouston, J. with Smith, A., 1979) have differed slightly in their listing of the effective school characteristics, there does seem to be fairly consistent agreement on the importance of the above factors.

Identification of Effective School Characteristics

The identification of characteristics associated with "effective" schools relied on a fairly simplistic two-stage analysis (Edmonds, 1979). First, standardized test achievement scores in reading and mathematics were compared for two student groups within school buildings (low SES versus middle and high SES). Eligibility for free and reduced lunch is recommended to determine low SES by the Connecticut State Department of Education. Individual school buildings were then sorted into two groups, those with or without SES student achievement differences. Individual in-depth case studies were next prepared to determine those dimensions on which outliers from the two groups differed. The identification of effective school characteristics were based on this comparison of outliers.

It should be noted that the above research strategy is correlational and thus does not provide definitive evidence on the influence of these factors in contributing to school effectiveness. During the past three years, there have been numerous attempts to manipulate the effective school characteristics in various combinations to determine if SES differences in student achievement decrease as the effective school characteristics become more incorporated into the functioning of particular school buildings (New York City Public Schools, 1980; Miles, M.B., Farrar, E., and Neufeld, B., 1983). It should be noted that this research is still in its infancy and has not yet been published in refereed journals; however, less informal presentations and correspondence among involved researchers do offer promise for this line of research.

Effective School Research Criticisms

As with any popular movement, there is no shortage of critics who stand ready to attack the legitimacy of this body of research. Criticisms generally focus on philosophical or methodological concerns. In terms of the former, critics often question the relevance of equity in determining the effectiveness of schools. This argument can be succinctly summarized by the comment, "If a school is doing a poor job teaching all students reading and mathematics, is this school really an 'effective' school?" Obviously not, argue the opponents of the effective school research.

In addition to the equity issue, other philosophical critics suggest that the emphasis on basic skills (reading and mathematics) in determining the effectiveness of schools ignores other valuable contributions schools make in the development of children. More simply, in order to be labeled "effective" must schools do more than provide quality basic skills instruction.

And finally, philosophical critics object to the use of standardized test achievement scores in the identification of effective schools. There has been much debate in other areas concerning the merit of normative standardized achievement test scores to assess educational programs and will not be repeated in full here. Briefly, opponents argue that such tests do not adequately reflect school curriculums and do not measure student knowledge or skill in any obsolute sense, but only in terms of their normative rankings. Opponents argue that schools should be judged effective on evaluation instruments that are constructed to provide indices of student achievement based on specific instructional goals and expected levels of mastery (criterion-referenced instruments).

Methodological criticisms up to now have focused on two major issues that are much more easily resolved -- the application of the research to secondary schools and to non-urban schools. Little attention has been directed to validating the research in secondary schools until recently. The New York City Schools recently announced the receipt of funding to extend their School Improvement Project based on the effective school research to the secondary level (New York Times, January 9, 1983). There have been some isolated and severely limited attempts to examine the relevance of specific characteristics to secondary schools (Firestone and Herriott, 1982; Brookover, 1981; Emmer and Evertson, 1980; and Emmer, et al., 1982; Center for Early Adolescence, 1982; Hamilton, 1982; Rutter, et al., 1979). However, there have been no reports as yet on the replication of this research at the high school level.

In reviewing actual school-based attempts, the careful reader will also note that almost uniformly, the school buildings that enter into this process are part of urban or metropolitan school districts. In some cases, schools in more suburban or small towns have participated, but their involvement represents a small fraction of the total sample.

All of the above issues certainly merit further discussion. In respect to the more philosophical concerns, we believe that the critics must offer testable alternatives so that constructive debate can continue. Until some realistic alternatives are suggested, it is difficult for the educational community to turn its back on the effective school research, potentially one of our best hopes for school improvement.

On the other hand, the proponents of the effective school research must respond to the methodological criticisms at this point. These issues can be fairly easily addressed and resolved by including both secondary and/or urban schools in future efforts. This paper reports on such an attempt to apply the effective school research to more rural school settings.

II. METHODS, TECHNIQUES, AND DATA SOURCES

In order to examine the applicability of the effective school research to rural school settings, we first reviewed the literature, especially related to research methodologies and procedures employed by others currently working in more urban school settings. Three main research groups were identified: the Connecticut State Department of Education, Bureau of School and Program Development; the Michigan State University Institute for Research on Teaching; and the New York City Board of Education. All three groups basically followed the same model: (1) the development of school building awareness and commitment to participate in the school assessment and improvement process; (2) an initial assessment of the school in terms of student achievement data and effective school characteristics; (3) the development of a needs assessment plan for school improvement; (4) the implementation of that plan; and (5) the reassessment of the school at a later point to determine if both sets of measures have improved (a decrease in SES-related student achievement test score differences and an increase in characteristics associated with effective schools). All three groups focused on individual school buildings and relied on both student achievement test data and school personnel input via structured interviews and questionnaires to determine school status on the effective school characteristics.

Two sets of materials resulted from the above review. First, the Connecticut State Department of Education model for the school assessment and improvement process was adopted as a generic model. In addition, an extensive set of research articles, video cassettes, reports, and survey instruments were collected. Both provided a knowledge base for sharing the effective school research with rural educators.

Although we would like to report that the above review and development of a knowledge base occurred prior to our introduction of the effective school research to rural educators, such was not the case. Instead we learned about the research as we explored its relevance and applicability with rural educators. We made the initial mistake of sponsoring an awareness session (with nationally known researchers) for them; their response prompted our enthusiasm to continue. Although we tried to temper their eagerness to continue until we felt more confident and informed, their enthusiasm was difficult to ignore. Given the usual quiescence and inertia we usually encountered in our earlier attempts to involve rural educators in research initiatives, our hesitation eventually caved in and we decided to nurture their unexpected response.

Research Examination Strategies

Three basic strategies were employed to study the applicability of this research to rural school settings in Vermont. Very briefly, awareness sessions (Strategy number 1) were held with rural school district personnel (mostly district superintendents and building principals, although some classroom teachers did attend). These sessions were conducted over approximately a one year period. The awareness sessions followed somewhat different formats and schedules. The first awareness session consisted of a week-long session that teams (consisting of superintendent, building principal, classroom teachers, and school board member) from five Vermont school districts attended. Three single day sessions were held during the school year that were open to and widely attended by school districts across the state. Some isolated presentations to individual school districts who expressed interest were also made as part of

their district in-service programs. All of these awareness sessions focused on reviewing and critiquing the effective school research, especially in terms of the validity and relevance of the definition of an effective school and the characteristics associated with effective schools. Nationally known researchers in the field as well as university and state education representatives made presentations during these awareness sessions. Sufficient time was always scheduled within these sessions to interact and obtain feedback from rural educators concerning their response to the effective school research, especially in terms of its applicability and feasibility in their schools. State-wide sessions were co-sponsored and financed by the University of Vermont and the Vermont State Department of Education; individual district sessions were sponsored by the particular district.

The University of Vermont also sponsored a graduate level education course through its off-campus continuing education program related to the effective school research (Strategy number 2). This course was divided into two parts which addressed the research literature concerning the effective school characteristics and the school assessment and improvement process (using the Connecticut State Department of Education model). This course was offered in two rural school district sites and attracted a variety of school district personnel. For example, at one of the two course sites, not only classroom teachers from all five elementary schools participated, but three of the five elementary school principals, the Title I special education coordinator, and the district superintendent also enrolled. These classes provided us with additional opportunities to explore with rural educators the appropriateness and validity of the effective school research to rural educators and the feasibility of conducting the school assessment and improvement in rural schools. Students

enrolled in the class were required to form school assessment teams and pilot-test on a limited basis the latter in their own schools. This exercise provided us with some very useful feedback and insight on the feasibility of the school assessment and improvement process in rural settings.

The final strategy involved the actual testing of the school assessment and improvement process in a small rural elementary school in central Vermont. The school studied has a pupil enrollment for grades K-6 of 110 and a full-time staff of five (5) classroom teachers supported by part-time specialists in health, speech, special education and Title I. These students and staff are crowded into a small, wood-frame, two-story structure which barely meets State minimum space requirements of thirty (30) square feet per pupil. The school is located in central Vermont in a semi-rural setting.

The initial contact was made by a board member of the three member board of education whose deep concern that the quality of education provided by the school be more closely reviewed by an outside source. After several meetings with the superintendent of schools, other school board members and school faculty, it was decided to conduct a school assessment study utilizing modified versions of the Connecticut State Department of Education instruments. Items revised or added to the instruments focused on space, instructional leadership (teaching principal arrangement) and science and social studies curricula. The study was funded in part by community donations and was conducted in June of 1982 with the results reported back to the board and faculty in August, 1982 during an in-service day prior to the opening of school.

The results of the study stem from four data sources which include a questionnaire distributed to all staff members, an interview of classroom teachers and superintendent, standardized achievement test analysis, and archival

documents. The results were clustered by the effective school characteristics of: safe and orderly environment; clear school mission; instructional leadership; high expectations for student achievement; student opportunity to learn and time on task; frequent monitoring of student progress; and supportive home-school relations (see Attachment A, Summary Profiles). As can be observed from these data, some strengths can be identified in safe and orderly environment, high expectations, opportunity to learn and time on task, and home-school relations. Areas revealing significant weaknesses were: clear school mission, and instructional leadership. A sub-item of the safe and orderly environment characteristic, that dealt with space, reflected a serious deficiency which was supported by our on-site observations.

The test results were examined from two perspectives. In order to address the equity issue, test data for each grade level were divided into two groups: "low social economic status" and "other." This permitted an analysis of to what degree do low income students perform on par with their peers. The second part of this analysis requires the school personnel to set a minimal level of mastery which in this case was the 30th percentile level. Thus it was possible to determine if there were any differences in the percentage of students from the two groups who were performing below mastery. Unfortunately, the testing program has not been consistently administered over time and the number of children in each cell made comparisons very difficult. We could not conclude one way or the other as to how the school was performing in regard to low SES students.

The archival information was very limited and did not surface new insights but rather substantiated some of the strengths and weaknesses surfaced by the interviews and questionnaire results.

Generally the study reinforced very forcefully areas needing further attention and improvement. The school system is presently exploring tuitioning upper elementary students (grades 4-6) to a neighboring district to relieve current crowding and contracting with this school for instructional leadership services. It was felt these two needs had to be addressed immediately in order to enable improvement to take place in other areas such as curriculum revision in social studies and science.

All three strategies provided input into determining the applicability of both the effective school research and the school assessment and improvement process to rural schools. The results are summarized in the following section.

III. RESULTS

The results of all three examination strategies generally produced similar findings. The research was judged by rural school district personnel to be appropriate and consistent in most cases with educational "best practices." As in other more urban areas, part of the appeal of the research was its "common sense" approach to school improvement. As Ronald Edmonds (1979) has repeatedly emphasized, "effective schools are today within the grasp of each and every educator." Given rural areas' limited access to new educational technology, school improvement efforts that rely on long accepted and practiced educational strategies are bound to be highly popular.

Although rural educators enthusiastically welcomed the spirit and promise of the effective school research, some specific concerns were raised. These again focused on both philosophical and methodological concerns. Both concerns generally paralleled those identified by their urban counterparts; however when differences occurred, they resulted because of contextual differences between urban and rural schools that impacted on the conduct of the school assessment and improvement process.

Philosophical Concerns

Rural educators wrestled with the definition of an effective school throughout the school year. Their debate did not focus on the relevance of equity in determining the effectiveness of a school, but on the consideration of only reading and mathematics as the criterion measure. They argued that schools do more than teach reading and mathematics, and those other instructional areas should be included in the criterion measure. One classroom teacher was finally able to focus this debate by noting that if schools were accountable for one thing,

it was reading and mathematics instruction. And that one responsibility should be used in deciding whether a school was effective. That particular line of reasoning convinced many rural educators to accept the effective school criterion measure.

The other philosophical concerns revolved around the appropriateness and generalizability of the instruments used to assess the status of the school on the seven effective school characteristics. These instruments were developed by the Connecticut State Department of Education (1981) but had not been validated in rural school districts. Rural educators enrolled in the graduate level course (Strategy number 2) as well as school district staff involved in the school assessment and improvement project in their school (Strategy number 3) reviewed both instruments (interview and questionnaire) and noted several weaknesses in the operational definitions of two of the seven effective school characteristics. These were eventually corrected as described below.

In the Connecticut State Department of Education (1981) interview instrument, specific items are provided to assess the status of the school on each of the seven effective school characteristics. For the "safe and orderly environment," more weighting is given to the physical safety, security, and disciplinary climate of the school building than to the general condition of the physical plant and up-keep of the building. No attention is given to the issue of sufficient space in which to operate the school instructional programs. In rural schools, there are very few security concerns; "safe and orderly environment" issues tend to revolve around building maintenance and adequate instructional space. In order to correct this imbalance from the rural school perspective, an additional item was added to determine if insufficient space was hampering the instructional programs of the school.

The assessment of the "instructional leadership role of the principal" characteristic also had to be closely scrutinized. In many of the smaller rural elementary schools, it is not uncommon for a classroom teacher to be appointed "head teacher" or "teaching principal." In those schools, the more traditional responsibilities and functions of the building principal will usually be shared by the "head teacher" and the district superintendent. In assessing the instructional leadership of the rural school, the functions of the principal have to be separated from the individual. More simply, the instructional leadership functions are still accepted as critical to the effectiveness of the school; however they may be fulfilled by many individuals (i.e., head teacher, superintendent, other classroom teachers). In assessing this characteristic, some modifications were made in the wording of the items to account for the fulfillment of these functions by others besides the non-existent full-time building principal.

An additional area requiring further exploration is the role of community in defining the mission of the school and in providing a perspective on the school's overall effectiveness. Much of the effective schools literature does not place high stress on home-school relations. It seems in rural settings the school often becomes a major outlet for community identification and whose support (economic and moral) is critical for ensuring effective performance.

The assessment of equity in students' achievement as part of the definition of an effective school is both a philosophical and methodological issue. Later in this paper is explored the problem of how to best identify low, socio-economic background students. The philosophical question at this juncture is how relevant is this issue at the building level where a large percentage of families are at or below poverty level standards. It does not become a question of inter-group variances but rather a question of overall achievement of all children and

what standard should be applied. For example, most schools set the 30th percentile as a minimum standard for mastery and it is not uncommon to find 60% or more of all students scoring below this standard. It seems this issue requires a broader base of comparison and there is a need to look at inter-school differences in a larger geographical area which is made up of comparable characteristics and family background. This line of thinking re-opens the debate around equal opportunity and educational financial support. The discrepancy of per pupil support varies greatly in states like Vermont from district to district and the solution to these disparate support levels continues to be illusive. Clearly more research and debate is needed to put the equity issue in perspective and to make it relevant to rural areas experiencing marginal or below poverty conditions.

Methodological Concerns

Methodological concerns identified by rural educators first echoed their more urban counterparts -- "Does it work at the high school?", "Does it work anywhere but in the big city schools?". But rural educators, as they learned more about the research and the model also raised some specific questions about actually conducting the school assessment and improvement process in their own schools.

Resource Questions

Their first set of questions centered on finding the resources to actually conduct a school assessment and improvement project. In the urban school projects, these projects have typically been conducted by one of three groups: (1) district research personnel as in New York City; (2) nearby university faculty as in Michigan; or (3) state department of education staff as in Connecticut. In

rural areas, school district central office staff rarely exceed a superintendent and business manager;none in Vermont have identified any staff positions with full-time research and evaluation responsibilities. University and state department of education may sometimes be available; however, access - time and travel - may pose insurmountable problems. In Vermont, the university was able to offer such assistance on a cost-recovery basis to assist school districts; however it should be noted that probably more than five buildings would severely tax available university resources.

In order to explore other options, university faculty trained school district personnel to conduct assessments in their own or nearby schools (as part of Strategy number 2). These personnel conducted interviews, distributed questionnaires, collected student achievement data, and analyzed all three data sets. This option, pilot-tested in either their own school or in another building on a very limited basis, generally proved unacceptable. School personnel reported that they felt uneasy in collecting information from their peers, especially in their own school or district, but also somewhat in other district schools as well. They did not feel adequately skilled in interviewing skills and/or other data collection and analysis techniques. The latter obviously could be corrected with additional training and practice. Release time for classroom teachers to collect and analyze school assessment data was also problematic. But perhaps the most cogent comment concerned the uneasiness of school personnel in collecting these data, especially in face-to-face interviews. At the end of the pilot test they strongly recommended that the assessment process be conducted by non-school personnel in order to ensure the validity and confidentiality of the data.

Resources are also necessary in order to develop a school improvement plan based on the school assessment and then to implement the plan. In the case

studies of the urban school districts we reviewed, these were done by individual school buildings, with outside building help often from the central office.

Most of the schools we have worked with in Vermont have not yet reached this point, yet several points seem clear from the awareness sessions (Strategy number 1) and course discussions (Strategy number 2). Because of their relative isolation and size, rural educators have fairly limited resources on which to draw. If they identify a particular weak spot, they may not be able to adequately respond because of time and staff limitations. For example, in one school the four elementary teachers identified the lack of a uniform, sequential curricula in reading and mathematics as one of their most pressing problems. But the probability of those four teachers undertaking the development of such a curricula in a reasonable amount of time seemed impossible. Since there were four other elementary schools in the district with the same problem, they were able to band together to address this problem, but still work independently to resolve other issues. Provision for non-district resources and inter-school networking is thus a must in rural schools involved in the school assessment and improvement process.

School Assessment and Improvement Model

A second set of questions was raised on the validity of the model for school assessment and improvement process. As we indicated above, the model will most likely require some modification to allow individual school buildings to band together to carry out parts of their school improvement plan. We also discussed that the awareness stage of the model required much more time to complete in rural schools than previously reported for urban schools. In the urban school settings, this has generally involved separate meetings first with

the district administration and then with the building principal, followed by an awareness presentation to the entire school faculty. A follow-up session is sometimes held with the school faculty to answer teacher questions. Once these awareness sessions reach the faculty level, little time elapses between the presentation and the decision by the school on whether to continue.

In our work in Vermont, we found schools required more time before deciding whether to continue. In those schools that have elected to move onto the next stage and have faculty eager, committed, and informed, the awareness period has involved many more meetings or presentations over several months. Some of our colleagues may joke that this may be another instance of the stereotyped Vermonter reaction to "flatlander" innovations; however we prefer to believe that it represents a true difference between urban and rural schools. Because of the small size of the rural school faculty, all will have an important role to play. There is simply insufficient numbers of teachers assigned to a single school to follow the urban school strategy of forming a school improvement committee to spearhead the school's effort. In order to win over the entire rural school faculty, more time is thus going to be needed.

Achievement - SES Analyses

A final set of questions arose as we began to pilot test the school assessment and improvement process in one of Vermont's more rural schools. As discussed earlier, student achievement data are analyzed to determine if significant SES differences exist in each grade. In rural schools, some of the traditional SES indicators are not reliable because of the overall reduced income levels. For example, the recommended Connecticut State Department of Education SES criteria (free or reduced lunch eligibility) results in 95% of one Vermont school

classified as low SES, including a share of the teaching staff's children. Rural schools must therefore find another more suitable SES indicator. Teacher ratings of SES were tried in our pilot-testing school; unfortunately these prove unreliable. In two very recent studies conducted in Vermont, mother's education level combined with child's eligibility for compensatory education provided a basis for identifying SES groupings.

In addition to the lack of an appropriate and reliable SES indicator, analyses of student achievement data by grade by SES group in rural schools often result in very small overall and cell sizes. For example, if there are only twenty students per grade, such analyses will likely result in cell sizes smaller than ten. Such small numbers hardly provide much confidence in the findings. One possible solution to this second problem may be to examine achievement data (combined reading and mathematics scores) for individual grade or cohort groups longitudinally to determine if consistent patterns of bias exist. Also, since in many rural school areas the overall percentage of low SES attending the school is so high, analyzing the test on other factors may be more informing. Thus far schools have requested comparisons on French surname, preschool experience, early admission, and handedness. There may also be some merit in tracking reading groups over time and determining the long-range impact and the degree of discrepancy in performance between groups.

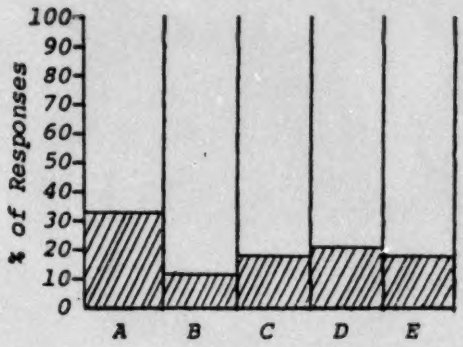
IV. SUMMARY

In sum, in this paper is provided an overview in how one rural state, Vermont, and respective educational partners in the State reviewed the effective school research, various models for school improvement, alternative data collection instruments, and procedures for analyzing student test data.

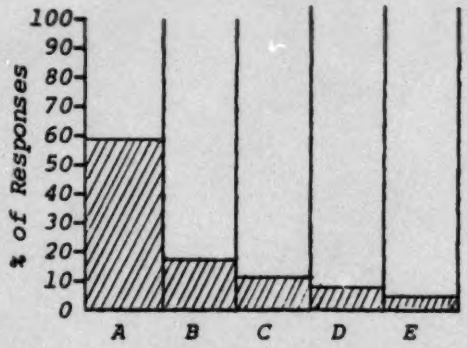
It is our judgment that the present state of knowledge about school improvement has relevance for a rural context and,with modifications suggested in this paper, can provide a powerful tool for local school personnel to examine their practices and to make sensible improvements. We have been impressed how the effective school research has provided a needed focus for releasing the professional commitment and talent that is very evident in rural settings.

Summary Profile - Interview

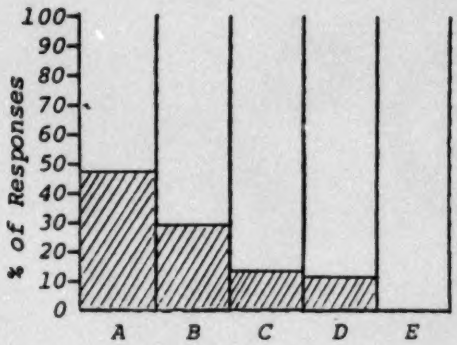
Safe/Orderly Environment



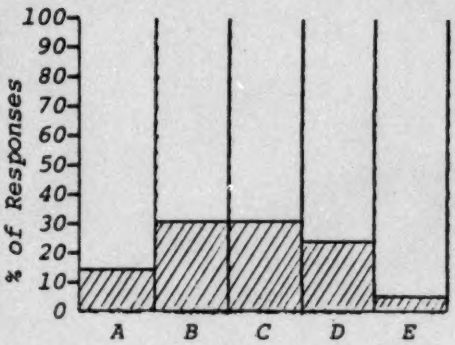
Clear School Mission



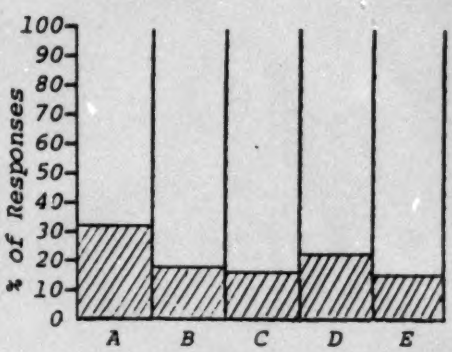
Instructional Leadership



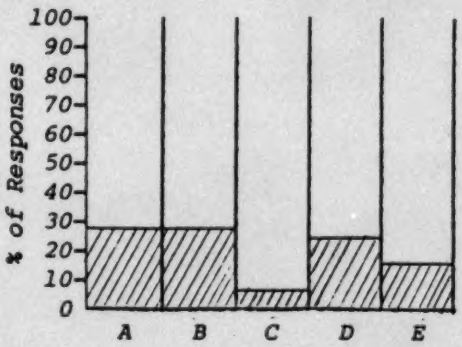
High Expectations



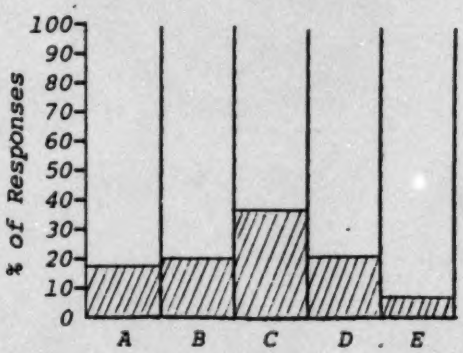
Opportunity/Time to Learn



Monitoring Student Progress

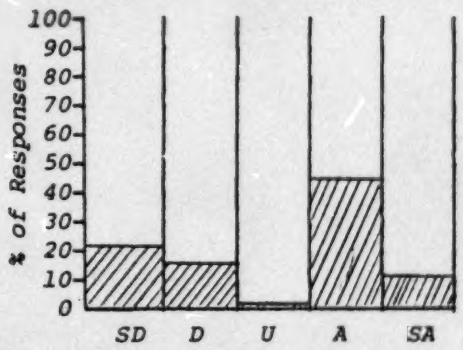


Home/School Relations

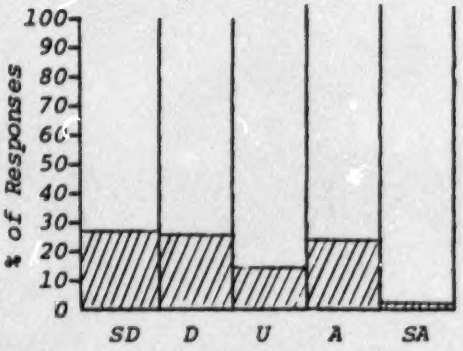


Summary Profile - Questionnaire

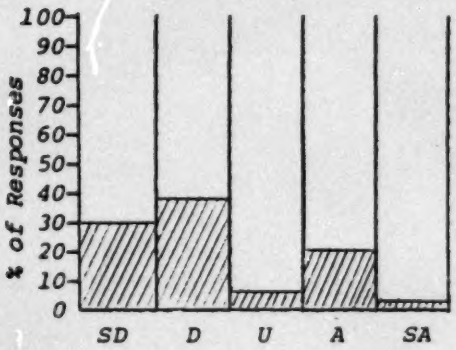
Safe/Orderly Environment



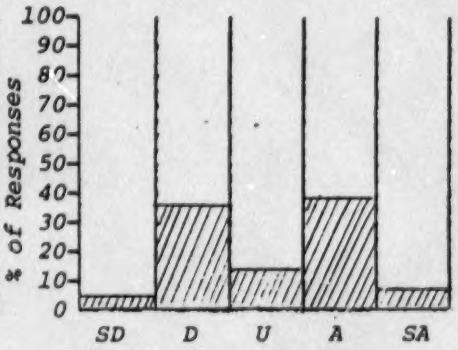
Clear School Mission



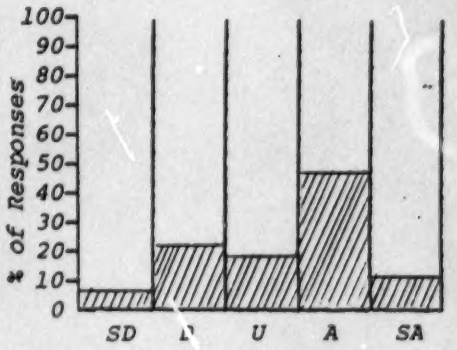
Instructional Leadership



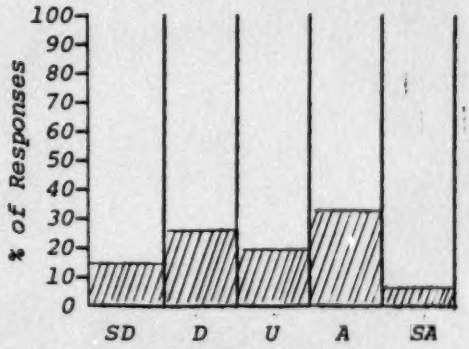
High Expectations



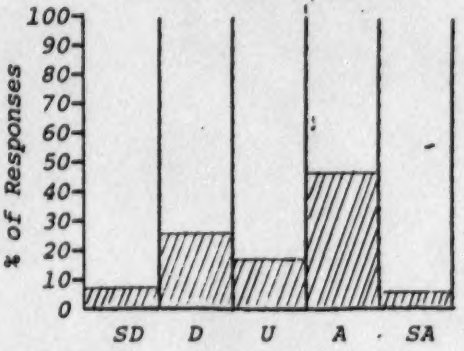
Opportunity/Time to Learn



Monitoring Student Progress



Home/School Relations



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